

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A device ~~Device~~ for detecting a mechanical actuation of an input element, that is spring-suspended in one plane and is from a this-level actuable both in a vertical direction as well as in a direction that is diagonal to the vertical at a specified angle to the vertical axis, the device comprising a switch element (18; 15) converting the motions subjected onto the input element (11) into electrical, digital signals, and a control module (16; 17) working on a the basis of pattern recognition that translates the electrical, digital signals supplied from the switch element (18; 15) ~~are provided~~, wherein the switch element (18; 15) exhibits a multitude of contact pairs (142; 143; 143; 145; 151) of a the contact matrix (15) that can be closed arbitrarily depending on a the position of the input element (11).

2. (Currently Amended) The device ~~Device~~ according to claim 1, wherein the switch element (12; 15) consists of a base plate (14) placed underneath the input element (11) that exhibits the a contact matrix (15) equipped with the contact pairs ~~contacts~~ (142; 143; 144; 145; 151) and wherein the input element (11) exhibits a calotte (12) on its underside (19) that exhibits an electrically conductive contact coating (18) on its convex surfaces opposite to the underside (19).

3. (Currently Amended) The device ~~Device~~ according to claim 2, wherein the calotte (12) consists of a deformable material, mainly an elastomer.

4. (Currently Amended) The device ~~Device~~ according to claim 21, wherein the calotte (12) exhibits a flat area in its center with a surface stretching parallel to the underside (19) of the input element (11) and a bevel at its edges.

5. (Currently Amended) The device ~~Device~~ according to claim 1, wherein the contact matrix (15) exhibits the a multitude of contact pairs ~~contacts (142; 143; 144; 145; 151)~~ along one axis.

6. (Currently Amended) The device ~~Device~~ according to claim 1, wherein the contact matrix exhibits a two-dimensional contact allocation.

7. (Currently Amended) The device ~~Device~~ according to claim 21, wherein the calotte (12) exhibits a profile of a polygone shape with no more than ten edges (234; 235) that corresponds to the underside (19) of the input element (11).

8. (Currently Amended) The device ~~Device~~ according to claim 21, wherein the calotte (12) exhibits a circular shape.

9. (Currently Amended) The device ~~Device~~ according to claim 1, wherein the

contact pairs ~~contacts (142; 143; 144; 145; 151)~~ of the contact matrix (15) are arranged in pairs of an alternating sequence.

10. (Currently Amended) The device ~~Device~~ according to claim 1, wherein the contact pairs ~~contacts (142; 143; 144; 145; 151)~~ of the contact matrix (15) are arranged coaxial to each other in an alternating sequence.

11. (Currently Amended) The device ~~Device~~ according to claim 1, wherein the contact pairs ~~contacts (142; 143; 144; 145; 151)~~ of the contact matrix (15) are arranged in a cross-over sequence.

12. (Currently Amended) The device ~~Device~~ according to claim 21, wherein a flexible foil (251) is provided underneath the input element (11) between the calotte (12) and the contact matrix (15) with a convex curvature (252) that is flexibly manouevrable into the direction of the input element (11) and is equipped with an electrical conductive coating (253) at the its underside in the area of the contact matrix (15).

13. (Currently Amended) The device ~~Device~~ according to claim 21, wherein the input element (11) is shaped as a joystick and flexibly mounted underneath a case cover (261), and further wherein the calotte (12) has ~~having~~ a convex shape.

14. (Currently Amended) The device ~~Device~~ according to claim 21, wherein the input element (11) is mounted flexibly opposite to a ~~the~~ base plate (14) within the casing (231) and is fixed to the base plate (14), and further wherein the base plate exhibits (14) exhibiting ~~exhibits (14) exhibiting~~ a notch (273) through which the calotte (12) can actuate a touch screen (272).

15. (Currently Amended) The device ~~Device~~ according to claim 1, wherein the input element (11) and a ~~the~~ casing (231) exhibiting flexible characteristics constitute a constructive unit.

16. (Currently Amended) The device ~~Device~~ according to claim 1, wherein the base plate (14) is equipped with a software controlled electro magnet for ~~for~~ delivering a tactile feedback to an ~~the~~ actuation status of the input element (11).

17. (Currently Amended) The device ~~Device~~ according to claim 1, wherein an integrated ~~inte-grated~~ circuit is provided underneath the input element (11), i.e. on a ~~the~~ base plate (14) that exhibits a multitude of electrodes performing the function of contacts, the integrated circuit being equipped with two power supply contacts, an input data transmission line for configuration and three output data transmission lines for output data of x, y and z values of ~~the~~ corresponding spatial axes.

18. (Currently Amended) The device ~~Device~~ according to claim 21, wherein a ~~the~~

base plate (14) lies on a display (271) with an integrated touch screen (272) and attached to it in a way that is undoable without any tools, so that the ~~convex~~ calotte (12) activates the touch screen (272) through a notch (273) in the base plate (14) whenever the input element (11) is activated, so that the touch screen (272) registers a specific position on the touch screen area depending on the actuation angle of the input element (11) because of the mechanical actuation by the calotte (12), and this position is transmitted for further processing, leading to a different content on the display (271) depending on the position.

19. (Currently Amended) A method for detecting a mechanical actuation of an input element, the method comprising:

providing the Method for a device according to claim 1;

checking, wherein a scanning unit (16) checks the rows and columns of the a contact matrix (15) for an electrical connection in a rapid sequence approximately approx-50 times per second via a scanning unit, wherein and an arbitrary combination of contacts of the contact matrix are (15) may be connected; and

generating the scanning unit (16) generates a bit pattern from these checks via the scanning unit, wherein the bit pattern that is transmitted to a pattern recognition unit (17) for further processing.

20. (Currently Amended) The method Method for a device according to claim 19, wherein the a-pattern recognition unit (17) interprets the a-bit pattern received from the scanning

unit-(16), wherein the bits represent ~~representing~~ closed contacts (62) of the a-contact matrix (15), in a way that an arithmetical average is derived from a ~~the~~ spatial position (63) of the closed contacts and a ~~the~~ tilt of the input element (11) along an axis is derived from the arithmetical average ~~this result~~.

21. (Currently Amended) A method for detecting a mechanical actuation of an input element, the method comprising:

Method for a providing the device according to claim 18;

interpreting wherein a pattern recognition unit (17) interprets a bit pattern received by a pattern recognition unit from a ~~the scanning unit-(16), wherein the bits represent~~ representing closed contacts (62) of the a-contact matrix-(15), in a way where a ~~the~~ number of closed contacts is summed up to derive a ~~the~~ flattening of the a-calotte (12) during ~~the~~ activation of the input element (11); and

deriving an the applied pressure of the input element (11) is derived from the flattening of the calotte during the activation of the input element ~~this result~~.

22. (Currently Amended) A method for detecting a mechanical actuation of an input element, the method comprising:

providing the Method for a device according to claim 18;

interpreting wherein a pattern recognition unit (17) interprets a bit pattern received by a pattern recognition unit from a ~~the scanning unit-(16), wherein the bits represent~~ representing

closed contacts (62) of ~~the a~~ contact matrix (15), in a way that two arithmetical averages (211;
212) are derived from ~~the~~ spatial positions (63) of the closed contacts; and
deriving a the-tilt of the input element (11) along two axes is derived from the two
arithmetical averages~~this result.~~

23. (Currently Amended) The method ~~Method~~ according to claim 19, further
comprising:
closing one or more of the multitude of contact pairs on the contact matrix with a wherein
the calotte (12) of ~~the a~~ round input element (11) closes a multitude of contacts on a contact
matrix (15), wherein the multitude of contact pairs that are arranged in a two-dimensional two-
dimensionally with respect to the contact matrix; and
deriving a tilt from the position of the one or more closed contacts via a the-controller
~~deriving the tilt from the position of the closed contacts.~~

24. (Currently Amended) The method ~~Method~~ according to claim 19, wherein a the
calotte (12) of ~~the an~~ input element (11) closes up to two contacts on ~~the a~~ contact matrix (15), so
that a lateral actuation closes a single contact and an actuation in a the center closes two contacts.

25. (Currently Amended) The method ~~Method~~ according to claim 19, further
comprising:
tilting the input element against an elastic force by an operating person for measuring

~~wherein to measure the~~ an activation of input elements (11) of electronic devices, ~~the input element (11) formed like a key or a joystick can be tilted against an elastic force by an operating person,~~ so that an electrically conductive, curved area on an ~~the~~ underside (19) of the input element (11) touches the ~~a~~ contact matrix (15) at various positions and thus closes one or more electrical contacts, wherein the input element is formed as a key or a joystick;

evaluating the one or more closed electrical contacts via ~~that are evaluated by a control module consisting of a scanning unit (16) and a pattern recognition module (17);~~ and

deriving a ~~the~~ tilt and a ~~the~~ direction of the activation of the input element (11) being derived from one or more positions ~~the position~~ of the closed contacts.

26. (Currently Amended) The method ~~Method~~ according to claim 1918, further comprising:

deriving an ~~wherein the~~ applied pressure is derived from a ~~the~~ number of closed contacts, wherein the number of closed contacts is ~~being~~ determined by a flattening of a ~~the~~ contact medium calotte, of the input element, (12) on the contact matrix (15) as a result of ~~the~~ force applied to the input element (11).